

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No.12

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte DALE E. POLK, JR.

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Appeal No. 2000-1149  
Application 08/993,516

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ON BRIEF

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MAILED

SEP 16 2002

PAT. & T.M. OFFICE  
BOARD OF PATENT APPEALS  
AND INTERFERENCES

Before WARREN, OWENS and WALTZ, Administrative Patent Judges.

WALTZ, Administrative Patent Judge.

**DECISION ON APPEAL**

This is a decision on an appeal from the examiner's refusal to allow claims 1 through 4, 6 and 7 as amended subsequent to the final rejection (see the amendment dated Aug. 23, 1999, Paper No. 7, entered as per the Advisory Action dated Sep. 20, 1999, Paper No. 8). Claims 8 through 13, the only other claims pending in this application, stand withdrawn from consideration by the examiner as directed to a nonelected invention (Brief, page 2). We have jurisdiction pursuant to 35 U.S.C. § 134.

According to appellant, the invention is directed to a thermoplastic molding process where the thermoplastic extrusion die for the extrusion of a thermoplastic slab has a plurality of adjustable die gate members for varying the thickness of the extruded material in different parts of the extruded slab (Brief, page 2). Appellant states that the rejected claims do not stand or fall together (Brief, page 4) but do not present reasonably specific, substantive reasons for the separate patentability of any dependent claim (Brief, pages 9-10). Appellant merely reiterates the limitations of the dependent claims (*id.*). Merely pointing out differences in what the claims cover is not a sufficient argument as to why the claims are separately patentable. See 37 CFR § 1.192(c)(7)(8)(1998). Accordingly, we select claim 1 from the first ground of rejection and claim 2 from the second ground of rejection, with claims 3, 4, 6 and 7 standing or falling together with claim 2, and decide these grounds of rejection on the basis of these claims alone. See *In re McDaniel*, 293 F.3d 1379, 1383, 63 USPQ2d 1462, 1465 (Fed. Cir. 2002). A copy of representative claims 1 and 2 is attached as an Appendix to this decision.

The examiner has relied upon the following references as evidence of obviousness:

Knopf	4,517,145	May 14, 1985
Murayama et al. (Murayama)	4,776,782	Oct. 11, 1988
Okumura et al. (Okumura)	5,500,170	Mar. 19, 1996

Claim 1 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Okumura in view of Knopf (Answer, page 3). Claims 2-4 and 6-7 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Okumura in view of Knopf and Murayama (Answer, page 4).<sup>1</sup> We *affirm* all of the examiner's rejections essentially for the reasons set forth in the Answer and those stated below.

### OPINION

The examiner finds that Okumura teaches the basic claimed method of molding a thermoplastic, including the steps of selecting an extrusion die, heating the thermoplastic material, adjusting the extrusion die for varying the thickness of the extruded material, extruding a slab of thermoplastic material, trimming the slab, placing the slab in a compression mold, and compression molding the slab (Answer, pages 3-4, citing various column and line citations to Okumura). The examiner recognizes that Okumura teaches adjusting the thickness of the extruded material but does not teach using an extrusion die with a plurality of gates (Answer, page 4). To remedy this deficiency in Okumura, the examiner cites Knopf for the teaching of an improved extrusion die with a plurality of inner flow surfaces (die gates) which can be separately adjusted to thereby vary the thickness across the length of the thermoplastic material

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<sup>1</sup> The final rejection of claims 1-4 and 6-7 under the second paragraph of 35 U.S.C. § 112 was withdrawn by the examiner in view of the amendment dated Aug. 23, 1999, Paper No. 7 (see the Advisory Action dated Sep. 20, 1999, Paper No. 8).

being extruded (*id.*). From these findings, the examiner concludes that it would have been obvious to use the teachings of Knopf with the thermoplastic molding process of Okumura "in order to extrude a material with a varying thickness providing for a more detailed control and greater accuracy throughout the slab's width to thereby conform to the thermoforming mold." *Id.* We agree.

Appellant argue that Okumura has a single adjustable device for adjusting plastic thickness<sup>2</sup> and this design does not allow gates to be side-by-side to allow for thickness control (Brief, page 5). This argument is not persuasive since it is only directed at Okumura and not the combination of Okumura and Knopf as proposed by the examiner. See *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981)(Obviousness is tested by what the combined teachings of the references would have suggested to one of ordinary skill in the art). The examiner has shown the motivation to *modify* the molding process of Okumura by incorporating the extrusion head taught by Knopf for the advantages taught by Knopf (see the Answer, page 4).

Appellant argues that Knopf discloses a plurality of inner flow surfaces of a single die in opposed relationship to each other to define a die gap while the present invention uses a plurality of die gates to produce an uneven flow of material (Brief, page 7). This

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<sup>2</sup> Appellant is apparently referring to the thickness restriction plate 47 of Okumura (see col. 7, l. 58-col. 8, l. 4).

argument is not persuasive since, as correctly argued by the examiner, the adjustable die gates of the claimed subject matter “read on” the plurality of inner flow surfaces of Knopf (Answer, paragraph bridging pages 7-8). Knopf discloses a plurality of inner flow surfaces with the corresponding plurality of means for adjustment (Answer, page 8; see Knopf, col. 2, ll. 60-68; col. 3, ll. 9-18; and the adjustment bolts **10** at col. 5, l. 65).

With regard to claim 2 on appeal, the examiner applies Murayama in addition to the references discussed above (Answer, page 4). The examiner finds that Murayama teaches moving the female compression mold (thermoforming mold) having a molded part therein while the mold is cooled (Answer, page 5, citing col. 9, ll. 39-46). Although the examiner makes additional findings regarding Murayama (Answer, page 5), we need only consider the finding discussed above and the examiner’s conclusion of obviousness since we limit our consideration to claim 2 on appeal. The examiner concludes that it would have been obvious to one of ordinary skill in the art to use the teachings of Murayama with the thermoplastic molding process of Okumura “in order to increase the production of the thermoformed articles.” *Id.* We agree.

Appellant argues that Murayama only teaches a way to position the molds for compression after loading the mold, and neither Murayama nor Okumura teach use of a moveable carriage for loading the molds (Brief, page 6). Appellant’s first argument is not well taken since claim 2 is only limited to moving the thermoforming mold “having a

molded part therein while said mold is cooling" (see claim 2 on appeal). Since the thermoforming mold having a molded part therein must be removed from the upper fixed mold and will be cooling in the air during this removal after compression molding, the limitations of claim 2 would have been disclosed by either Okumura or Murayama. Appellant's second argument is also not well taken since, as noted by the examiner (Answer, page 7), appellant does not recite a moveable carriage in claim 2 on appeal.

Appellant argues that it would have been unobvious to combine Okumura, Murayama and Knopf "without a complete redesign of the machines, which redesign would be unobvious to a person of ordinary skill." Brief, page 8. This argument is not persuasive since the examiner is not proposing the complete redesign of the machines of the applied references, but is merely proposing the modification of the method and apparatus of Okumura to incorporate the improved extrusion die of Knopf for its attendant advantages (see the Answer, page 9). See *In re Keller, supra* ("To justify combining reference teachings in support of a rejection it is not necessary that a device shown in one reference can be physically inserted into the device shown in the other."). Murayama was merely cited by the examiner to show the well known use of rotational devices for moving molds throughout a thermoplastic molding process (Answer, page 5).

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For the foregoing reasons and those set forth in the Answer, we determine that the examiner has established a *prima facie* case of obviousness in view of the reference evidence. Based on the totality of the record, including due consideration of appellant's arguments, we determine that the preponderance of evidence weighs most heavily in favor of obviousness within the meaning of section 103. Accordingly, we affirm the examiner's rejections under 35 U.S.C. § 103(a).

The decision of the examiner is affirmed.

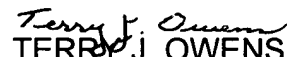
No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

**AFFIRMED**



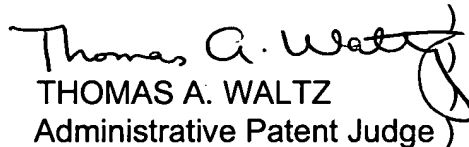
CHARLES F. WARREN )  
Administrative Patent Judge )

) BOARD OF PATENT



TERRY J. OWENS )  
Administrative Patent Judge )

) APPEALS AND  
) INTERFERENCES



THOMAS A. WALTZ  
Administrative Patent Judge )

TAW:yr

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## APPENDIX

1. A thermoplastic molding process comprising the steps of:

selecting a thermoplastic extrusion die for extruding a slab of thermoplastic material, said extrusion die having a plurality of adjustable die gates therein placed adjacent to each other and separately adjustable for varying the thickness of the extruding material in different parts of the extruded slab;

adjusting the thermoplastic extrusion die plurality of adjustable die gates for varying thickness of the extruded material passing therethrough in different parts of the extruded slab to thereby vary the thickness across the thermoplastic materials being extruded;

heating a thermoplastic material to a fluid;

extruding a slab of said fluid thermoplastic material through said selected and adjusted thermoplastic extrusion die gates;

trimming said extruded thermoplastic slab having a variable thickness to a predetermined size;

placing said trimmed slab of heated thermoplastic material into a thermoforming mold; and

molding a predetermined thermoformed part in said mold, whereby a molded part is formed with a variable thickness from a slab of material heated during extrusion of the material.

2. A thermoplastic molding process in accordance with claim 1 including the step of moving said thermoforming mold having a molded part therein while said mold is cooling.